Astronomical Searches for Organic Molecules

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Searches in the interstellar medium for large organic molecules of biological relevance have been conducted using the Arizona Radio Observatory 12m telescope on Kitt Peak, Arizona. The species of interest are glycolaldehyde and dihydroxyacetone. A systematic observational study of glycolaldehyde was recently completed towards the giant molecular cloud Sagittarius B2(N). 35 transitions of glycolaldehyde were observed at 2 and 3 mm, and a column density of 6×10^{13} cm^{-2} was found for this molecule. Radio astronomical searches are now being conducted for dihydroxyacetone in the interstellar medium. Twelve transitions of dihydroxyacetone have been studied thus far at 2 and 3 mm towards Orion-KL. These molecules are simple sugars and represent some of the precursors of life.